EARTH SCIENCE Test 1 Study Guide

States of Matter:

1. With examples, what are the different states of matter?
2. How does the arrangement of atoms influence the state, volume, shape of matter?
3. What are the processes that result in a change in the state of matter?
4. How does the flow of energy drive changes in state?
   1. Solid to liquid - melting
   2. Liquid to gas – evaporation and vaporization
   3. Gas to plasma - ionization
   4. Liquid to solid - freezing
   5. Gas to liquid - condensation
   6. Plasma to gas – de-ionization
   7. Solid to gas – sublimation
   8. Gas to solid – deposition or reverse-sublimation
5. What is a plasma?
6. How does ionization work?
7. Melting vs. Boiling point
8. Mixture vs. Compound
9. Molecule vs. Compound
10. Atoms – nucleus (protons and neutrons) and electron shells (electrons)
11. Electron configuration (2, 8, 8 or more depending on the element)
12. Valence shells and valence electrons
13. What is an element?
14. The periodic table of elements
    1. Trends down groups e.g. Alkali metals
    2. Trends across periods
    3. Main groups (Alkali metals, Alkali Earth Metals, Transition elements, Halogens, Noble gasses, Metalloids)
15. Atomic number relationship to number of protons, atomic mass number.
16. What is an Isotope?
    1. Parent radioactive
    2. Daughter most stable
    3. Decay = release of energy
17. Why do atoms bond?
18. Chemical Bonding
    1. Covalent (Polar and non-polar)
    2. Metallic
    3. Ionic